

What is claimed is:

1. A digital TV system for supporting a film mode, comprising:

a film mode detection unit for detecting whether a decoded video signal received in the form of TS (transport stream) or an input video signal received in the form of CVBS or YPbPr component corresponds to a film;

a film mode processing unit for generating an original frame from two fields except for repeated fields among N fields inputted in an interlaced scanning method if the film mode is detected by the film mode detection unit, and converting the generated frames into N frames of a progressive scanning type by repeatedly outputting the generated frames three times or twice by a specified rule; and

15 an OSD processing unit for displaying an icon for indicating the film mode on a predetermined position of a TV screen if the film mode is detected by the film mode detection unit.

2. The digital TV system of claim 1, wherein the film mode detection unit detects the film mode if the input video signal or decoded video signal is of the interlaced scanning type and one field of the video signal is repeatedly inputted for a predetermined period.

3. The digital TV system of claim 1, wherein the film mode detection unit detects the film mode from header information top\_first\_field and repeat\_first\_field of an MPEG stream if the input video signal is compressed by an MPEG system.

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4. The digital TV system of claim 1, wherein the OSD processing unit displays caption data included in a DVD stream on the predetermined position of the TV screen in the form of an OSD if the video signal is inputted from a DVD in the film mode.

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5. The digital TV system of claim 1, wherein the OSD processing unit displays time information included in a DVD stream on the predetermined position of the TV screen in the form of an OSD if the video signal is inputted from a DVD in the film mode.

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6. The digital TV system of claim 1, further comprising an audio signal processing unit for setting an input audio signal to match the film mode in consideration of the number of speakers provided in the digital TV and the number of channels of the input audio signal if the film mode is detected by the film mode detection unit.

7. A digital TV system for supporting a film mode, comprising:

an audio/video (A/V) signal input and demultiplexing unit for receiving and multiplexing a video signal, an audio signal, a  
5 DTV signal, and a DVD signal;

a video decoding unit for receiving a compressed video signal from the A/V signal input and demultiplexing unit, and restoring the video signal to pixel values of an original picture by decoding the video signal;

10 a film mode detection unit for receiving a video signal from the A/V signal input and demultiplexing unit or the video decoding unit, and detecting a film mode;

an audio decoding unit for decoding and restoring the audio signal to the original audio signal if the audio signal outputted  
15 from the A/V signal input and demultiplexing unit is compressed;

an audio signal processing unit for optimizing the decoded audio signal to match the film mode if the input signal corresponds to the film mode, and then analogizing the optimized audio signal;

20 a video format conversion and film mode processing unit for converting a format of the signal decoded by the video decoding unit into a format of an output device, and converting the video signal into 60 frames of an progressive scanning type in the film mode;

an OSD processing unit for displaying a caption, an icon, and a time on a DTV screen in the form of an OSD if the film mode is detected; and

5 a control unit for optimizing setting of the audio and video signals to match the film mode by controlling the film mode processing unit, the audio signal processing unit and the OSD processing unit if the film mode detection unit detects the film mode.

10 8. The digital TV system of claim 7, further comprising a memory for storing input bitstreams and frame buffers for motion compensation.

9. The digital TV system of claim 7, wherein if the input 15 signal is in the form of a CVBS or YPbPr, the film mode detection unit detects the film mode by judging whether a field is repeated for a predetermined period.

10. The digital TV system of claim 7, wherein if the input 20 signal is in the form of an MPEG-2 stream, the film mode detection unit detects the film mode using header information of the MPEG-2 stream.

11. The digital TV system of claim 10, wherein the film mode detection unit detects the film mode if a top\_first\_field and a repeat\_first\_field in a header of an MPEG-2 stream have a predetermined period.

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12. A method for supporting a film mode in a digital TV system, comprising:

a first step of detecting whether a picture received from an input video signal corresponds to the film mode;

10 a second step of converting N fields inputted in an interlaced scanning method into M frames of a progressive scanning type if the film mode is detected at the first step;

15 a third step of setting an input audio signal to match the film mode in consideration of the number of speakers provided in the digital TV and the number of channels of the input audio signal if the film mode is detected at the first step; and

a fourth step of displaying an icon for indicating the film dedicated mode on a predetermined position of a TV screen if the film mode is detected at the first step.

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13. The method of claim 12, wherein, in the case that the input signal is in the form of a CVBS or YPbPr, the first step detects the film mode if a field is repeated for a predetermined period.

14. The method of claim 12, wherein, in the case that the  
input signal is in the form of an MPEG-2 stream, the first step  
detects the film mode using header information of the MPEG-2  
5 stream if the header information has a predetermined period.

15. The method of claim 12, wherein the second step  
generates the original frame from two field except for repeated  
frames among the N fields inputted in the interlaced scanning  
10 method, and converting the generated frames into the M frames of  
the progressive scanning type by repeating the generated frame  
three times or twice by a determined rule.

16. The method of claim 15, wherein the second step  
15 generates the original 24 frames except for the repeated fields  
among the 60 fields inputted in the interlaced scanning method,  
and converting the generated 24 frames into the 60 frames of the  
progressive scanning type by repeating the generated frames three  
times or twice by the determined rule.

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17. The method of claim 12, wherein the fourth step displays  
caption data included in a DVD stream on the predetermined  
position of the TV screen in the form of the OSD if the input

video signal corresponds to the film mode and the video signal is inputted from a DVD.

18. The method of claim 12, wherein the fourth step displays  
5 time information included in a DVD stream on the predetermined position of the TV screen in the form of the OSD if the input video signal corresponds to the film mode and the video signal is inputted from a DVD.